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**Envisioning more effective delivery of custom feeding programs using participatory
approaches: lessons from Eastern Cape Province, South Africa**

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Abstract

In South Africa, livelihoods of smallholder cattle farmers are constrained by a lack of appropriate production knowledge, climate change, inadequate support services, societal inequity, irrelevant pro-poor policies and inappropriate delivery of improved livestock technologies. A transdisciplinary team of local and international researchers conducted a workshop to explore opportunities and constraints to the delivery of a beef cattle custom feeding programme in Eastern Cape Province using participatory approaches, including visioning exercises. The main challenges to the cattle custom feeding programme reported by producers included lack of cattle production skills, lack of technical knowledge on feed production, limited funding and inconsistent cattle feed delivery. Participants envisioned a portfolio of locally-based solutions that included prioritisation of local feed production, identification of sustainable support networks, establishment of a communal herd to cover feeding centre's overhead costs and creation of a knowledge exchange platform for farmers. In addition, participants attempted to strengthen knowledge transfer among stakeholders through the development of an online site for knowledge exchange. Overall, the participatory approaches adopted empowered participants to freely express their opinions and openly share knowledge and experiences regarding common challenges and opportunities associated with delivery of a beef cattle custom feeding programme.

Keywords: Cattle, participatory approach, custom feeding programme, smallholder farmers, visioning exercise.

1.0 Introduction

In the smallholder farming sector of South Africa, cattle form an integral part of the sustainable food system, significantly contributing to household food, nutrition, income and social security through intra and inter-community trading (Ndoro et al., 2014; Mapiye et al., 2009). Smallholder beef cattle farmers in South Africa are increasingly being encouraged to contribute to national food, nutrition and income security by selling cattle into formal markets (Marandure et al., 2017). However, these farmers still face a host of challenges in attempting to engage with formal markets, including a lack of understanding and potential distrust of formal markets, inadequate livestock support services, enactment of irrelevant pro-poor policies and inappropriate delivery of improved livestock technologies designed to enhance their productive capacity (Mapiye et al., 2009; Ndoro et al., 2014). For this reason, projects are being developed in many smallholder communities to address these recognised shortcomings and enhance the contribution of cattle to local livelihoods and the national economy (Marandure et al., 2017). One such initiative is the beef cattle custom feeding programme pioneered by the Department of Rural Development and Land Reform (DRDLR) and the National Agricultural Marketing Council (NAMC) in the Eastern Cape Province of South Africa (Nyhodo et al. 2014).

The Eastern Cape Province supports about 25% of the national cattle herd of which 60% is under smallholder farmer ownership but only contributes 2% to the formal beef market (Mapiye et al., 2009). The custom feeding programme is intended to integrate communal beef producers into formal markets by improving the quality and volume of cattle prior to marketing (Marandure et al., 2017). Under the programme, individual cattle producers voluntarily send their cattle to a communal custom feeding centre, where they are managed and fed a subsidised grain-based commercial diet for up to four months prior to marketing (Marandure et al. 2017). The programme has now been active under NAMC auspices since 2009, at nine communities

57 within Eastern Cape Province. Local producers directly benefit from high income realised from
58 selling well-conditioned cattle, which enhances their livelihoods (Myeki et al. 2014).
59 According to Marandure et al. (2016) indirect benefits of custom feeding include reduced
60 grazing pressure in the rangelands, centralised cattle marketing centre and reduced
61 manipulation of cattle producers by speculators among others. Custom feeding centres also
62 provide jobs such as, feeders, record keepers, financial and security personnel for the local
63 community (Marandure et al. 2016). However, no systematic attempt has been made to
64 understand stakeholder perceptions of how the programme is being delivered, what it has
65 achieved from a community perspective and how, if at all, this might be improved.

66
67 Integrated perspectives regarding delivery and progress of livestock-based projects can be
68 obtained from stakeholders, particularly producers and key informants, through participatory
69 approaches (Fraser et al., 2006; Lisson et al., 2010). According to Dauphin, (2001), a
70 participatory approach refers to ‘a partnership which is built upon the basis of dialogue among
71 the various actors, during which the agenda is jointly set, and local views and indigenous
72 knowledge, skills and resources are deliberately sought and respected’ in the design of
73 interventions. Participatory approaches, therefore, empowers locals to independently own and
74 share development outcomes and consequently break the dependency mentality usually
75 associated with local communities. This implies that participants take the role of actors during
76 problem identification, designing of alternatives and implementation of new technologies,
77 instead of beneficiaries role, thereby, eliminating the dominance usually imposed by
78 researchers (Kezar & Maxey 2016). However, there is little evidence of the long-term
79 effectiveness of participation to achieve the overall goal of improving living conditions of
80 vulnerable people and be considered as a means for social change (Mubita et al. 2017).

Contrary to the common notion that planning and implementation of development programmes is best done with full participation of the local population, critics argue that it has become an act of faith that people believe in and rarely questions (Guijt 2014). The major criticism is on the failure of participatory methodologies to challenge the bureaucratic structures that control decision-making and resource allocation (Guijt 2014). Lack of influence on the bureaucratic structures through participation translates to cosmetic empowerment of locals. Participation is sometimes used by development practitioners as a ‘window dressing’ procedure to rubberstamp or legitimize their agenda under the guise that they originated from the locals (Barakabitze et al. 2017). Participation is often associated with complex, technical procedures, thus, is deliberately disregarded by most development practitioners who often focus their attention on funding organisations and are in a hurry to complete their projects and achieve outcomes (Mubita et al. 2017).

The paradigm shift from advocacy to designing methodologies that effectively reflect perspectives and voices of the vulnerable members of society gave birth to different participatory approaches (Campbell 2017). Focus group-based knowledge sharing and planning, SWOT analysis and visioning mapping exercises, in particular, provide options that enable inclusive and active participation irrespective of literacy levels and expressive styles (Mubita et al. 2017). For example, in a visioning exercise, participants collectively and actively create images diagrams, sketches or models that graphically present current problems and guide the process of designing solutions (ODI 2009; Mississauga 2014). A workshop was, therefore, conducted in the Eastern Cape Province of South Africa using focus group discussions, SWOT analysis and visioning mapping exercises to evaluate smallholder farmer challenges and opportunities in the delivery of the beef cattle custom feeding programme.

2.0 Methodology

2.1 Workshop location

The workshop was conducted in Cala (31°31'0"S, 27°42'0"E) in Eastern Cape Province of South Africa over a period of three days from the 13th to the 15th September 2016. This venue was chosen because of its central location in relation to the three custom feeding centres that were the focus of the workshop (Figure 1). The workshop participants were from the villages of Gxwalubomvu (32°1'12"S, 27°45'6"E) and Ncorha (31°49'00"S, 27°44'00"E), and small farms around the town of Elliot (31°31'30"S, 27°83'70"E) in Eastern Cape Province. Gxwalubomvu and Ncorha communal custom feeding centres are located in Intsika Yethu Local Municipality of Chris Hani District Municipality, about 80 km East of Queenstown (Figure 1). Both communities have operational beef cattle custom feeding centres, which mainly sell cattle through informal markets. Elliot, home to the Ikhephu commercial custom feeding centre, is located in Sakhisizwe local municipality about 120 km north-east of Queenstown (Figure 1). Ikhephu commercial custom feeding centre was constructed to benefit commercially-oriented cattle producers, resettled on surrounding private farms as part of the government Land Redistribution for Agricultural Development (LRAD) programme. This custom feeding centre is mainly linked to the formal red meat value chain through commercial abattoirs.

2.2 Selection of workshop participants

Invitations were sent out to cattle producers from Gxwalubomvu, Ncorha and Ikhephu communities through their community leaders. Project participants included seven cattle farmers and one technical intern from Gxwalubomvu, four cattle farmers and one technical intern from Ncorha. Ikhephu commercial custom feeding centre was represented by two cattle farmers, one custom feeding programme manager, one technical intern and one student intern.

Three animal scientists from Stellenbosch University in South Africa, two agroecologists and one social scientist from Centre for Agroecology, Water and Resilience (CAWR) at Coventry University in the UK and one independent community development consultant from Canada also attended the workshop. Overall, nine of the 25 workshop participants were females comprising of five cattle farmers from Gxwalubomvu (three) Ncorha (one) and Ikhephu (one), three technical interns from Gxwalubomvu (one) and Ikhephu (two) as well as one researcher from Stellenbosch University.

2.3 Workshop strategy

The workshop was conducted for three days. Each day and activity was facilitated by one of the project team members with communication between the project team and participants undertaken in English but translated into the local Xhosa language. Participant discussions were grouped by custom feeding centre, with the opportunity for attendees from different feeding centres to interact over lunch, during reporting of findings and in the free time allocated before and after the formal agenda for each day. Discussions were undertaken in a language in which the group felt comfortable but reporting of findings both orally and in written format (using flipcharts) was undertaken in English, with translation of oral reports into Xhosa.

The workshop began with introductions by participants and a brief overview of its purpose. The remainder of the workshop on days one and two was then themed around three main sets of activities. Firstly, focus group discussions were initiated when communities were divided into three groups by custom feeding centres and asked to discuss and present (using flipcharts) the main issues (constraints as well as best practice) associated with the functioning of their custom feeding centres. As a guideline, they were asked to consider political, institutional, economic technical and infrastructural issues.

157

158 The second activity was a SWOT (Strengths, Weaknesses, Opportunities and Threats) analysis
159 of each of the custom feeding centres and sharing of the outcomes from this analysis through
160 flipchart presentations as outlined by Marta-Costa and Costa (2011). Thirdly, participants
161 engaged in a ‘visioning’ stakeholder mapping exercise (ODI 2009), which involved analysing
162 existing linkages between all stakeholders currently involved in each custom feeding centre .
163 The visioning exercise was the linking exercise between the articulation of the ‘issues’ and the
164 ‘solutions’ that the communities collectively arrived at, based primarily on rethinking local
165 actor networks associated with the custom feeding programmes. Participants were asked to
166 produce a diagram indicating their perception of the relationship, benefits and level of
167 interaction between their custom feeding centre and each of the stakeholders. In the diagram,
168 the distance between the custom feeding centre and the stakeholder represented the strength of
169 the relationship, such that stakeholders positioned closer to the custom feeding centre indicated
170 a strong relationship and those positioned far away reflected a weak relationship (Hovland
171 2005). Participants were also asked to draw up a list of additional stakeholders they were
172 interested in forming relationships with in the longer term.

173

174 Based on the issues identified through focus group discussions, the visioning exercise and the
175 SWOT analysis, the participants then engaged in a discussion on potential solutions to the
176 challenges facing the custom feeding centre programmes and identifying the stakeholders who
177 might be important in achieving these solutions. The participants then revisited their group
178 stakeholder mapping diagrams, and identified some of the changes they envisioned might be
179 realised by introducing new actors and by modifying relationships with existing actors
180 (Hovland 2005). On the final day the participants visited Ikhephu commercial custom feeding
181 centre in Elliot.

3.0 Results

3.1. Challenges identified

3.1.1 *Technical challenges*

Participants from Gxwalubomvu and Ncorha custom feeding centres reported lack of understanding of cattle farming as a key constraint. In particular, technicians were limited in their capacity to undertake routine cattle management practices, such as dehorning, deworming and vaccination when animals were brought to the custom feeding centres. Participants from Ikhephu custom feeding centre reported a lack of basic equipment to undertake these practices, rather than a lack of knowledge. Participants mentioned that some producers took advantage of the relaxed entry conditions at Gxwalubomvu and Ncorha custom feeding centres to bring animals that were too old and/ or too sick for finishing. In some cases, these custom feeding centres were being used to sustain old, sick and vulnerable animals and safeguard animals during drought. In contrast to the communal custom feeding centres, Ikhephu commercial custom feeding centre technicians were confronted with the challenge of farmers bringing animals that were too young and which had to stay in custom feeding centres for longer periods. The introduction of a weighing scale at Ikhephu commercial custom feeding centre was reported to have minimised the problem of farmers bringing young animals to the feeding centre.

Participants from Gxwalubomvu and Ncorha custom feeding centres who depend entirely on the subsidised commercial feed provided by NAMC reported frequent delays in feed delivery and cattle going for extended periods of time without feed. At times cooperative funds were used to purchase emergency feed to avoid animal weight loss and deaths. Inadequate knowledge of feed budgeting was reported by participants from all the three feeding centres. Participants from Gxwalubomvu and Ncorha custom feeding centres also indicated frequent

cases of diarrhoea and bloat in their herds that they blamed on the high-grain, low-forage commercial diet delivered by NAMC.

3.1.2 Infrastructural challenges

Participants from Gxwalubomvu and Ncorha highlighted infrastructural challenges including inadequate shelter and/or leaking roofs at the feeding centres which allowed rain water to contaminate the feed. Ncorha participants reported that their feeding centre was not well-fenced, thus, animals from outside were gaining entry and consuming feed meant for cattle at the feeding centre. Gxwalubomvu and Ncorha technicians also complained about the poor state of the roads leading to the custom feeding centres, as well as an absence of roadside signposts to give directions to the feeding centre locations. Ikhephu technicians highlighted that their custom feeding centre is located on a windswept area of grassland and is, therefore, vulnerable to destruction by natural fires.

Water scarcity and lack of proper water facilities were reported as a serious problem at all the sites. There was, however, hope at Ncorha village of addressing the problem of water scarcity, as the government had initiated a community-based irrigation programme. The programme involved increasing the capacity of Ncorha dam and installing water access facilities to the whole community, and it was hoped that this will be extended to the custom cattle feeding centre.

3.1.3 Institutional challenges

Participants from all the three custom feeding centres mentioned that veterinary support was expensive and limited as the local veterinary officer often lacked access to a vehicle for regular visits or emergencies. In addition, government extension and veterinary officers required

payment to visit members of the custom feeding centre. The payment was often beyond what the farmers could afford. Participants also expressed concern about inadequate security which left animals in the custom feeding centres vulnerable to theft. In fact, Ikhephu participants highlighted escalating cases of cattle theft from the custom feeding centre as a key threat to its operation, discouraging farmers from bringing animals. This was despite that the centre is well fenced and has day and night security guards. Other institutional challenges raised include inadequate operational budgets and late payment of custom feeding centre staff salaries by the responsible local government departments.

3.1.4 *Economic challenges*

All the participants acknowledged the lack of effective marketing strategies for both the formal and informal beef markets. Participants from Gxwalubomvu and Nchora found it easier to sell into the informal markets, which instantly paid more money than the formal market. Gxwalubomvu and Nchora participants also mentioned lack of access to formal credit and insurance due to high interest rates, lack of collateral and capacity to pay.

3.1.5 *Political challenges*

Gxwalubomvu and Ncorha participants reported that some community leaders, with no interest or understanding of the custom feeding programmes, lacked the political will to support them. Furthermore, some non-programme members grazed their livestock within the premises of the custom feeding centre at night arguing that the resources were provided by the government and, therefore, should benefit all members of the community. This was said to escalate during drought years as farmers became desperate to provide feed for their animals. At Ikhephu commercial custom feeding centre some politically-connected individuals were able to flout the custom feeding centre regulations for the benefit of their livestock. There was also

resentment and jealousy from some farmers who actively encouraged people not to make use of the custom feeding centre. This was linked to the ongoing tension between farmers due to lack of access to resources by non-members.

3.2 The visioning exercise outcomes

Participants at Ncorha suggested that the operation of their custom feeding centre currently involved a fairly limited network of six main actors namely; Department of Agriculture, NAMC, Rural Development, Local Municipality, District Municipality and Stellenbosch University. They perceived their closest relationships were with the Department of Rural Development and Land Reform (DRDLR), the local municipality and NAMC. In envisioning an alternative actor network, they suggested there would be added value in expanding their actor network to include close relationships with the Expanded Public Works Programme (EPWP), the National Youth Development Agency (NYDA) and DRDLR. In contrast, this would see the weakening of existing relationships with NAMC and the local municipality. Relationships with DRDLR remained strong and those with Department of Agriculture Forestry and Fisheries (DAFF), the District Municipality and Stellenbosch University (SU), remained quite distant.

As with Ncorha, participants from Gxwalubomvu perceived a fairly limited actor network currently involved in the custom feeding centre operation. This involved close relationships with the local community, NAMC and DRDLR, weaker relationships with EPWP through the local municipality and Department of Rural Development and Agrarian Reform (DRDAR) and distant relationships with SU and East London Abattoir. In envisioning their alternative actor network, participants suggested expanding this considerably by developing additional close relationships with the following governmental actors: National Emergent Red Meat Producers

Organisation (NERPO), NYDA, Department of Trade and Industry (DTI), Small Enterprise Development Agency (SEDA) and the Small Enterprise Finance Agency (SEFA; Figure 3B). The DTI, SEDA and SEFA were primarily viewed as potential sources of additional finance for the custom feeding centre. The relationships with DRDLR and NAMC were slightly weakened in this new network, while the relationship with SU became much stronger. Relationships with the local community, the EPWP and the DRDAR remained unchanged.

Participants from Ikhephu perceived a much wider network of eleven actors currently involved with the commercial custom feeding centre, in comparison with the other custom feeding centres. Close existing relationships were recognised with National Development Agency (NDA), the Integrated Planning and Economic Develop (IPED) programme of Chris Hani District Council (CHDC), NAMC, DRDLR, DRDAR, EPWP and Andrew's Abattoir. More distant relationships existed with Farm Vision, Chris Hani Development Agency (CHDA) and CHDC. There was a very distant relationship with the Agricultural Sector Education Training Authority (AgriSETA). The alternative network they envisioned, involved a closer relationship with the farmers and the different cooperatives within Ikhephu, as well as with private companies such as the Old Mutual insurance company and with Oos Vrystaat Kaap (OVK) Coop. These new relationships underpin the potential solutions (Table 1) that they considered to mitigate existing challenges in service delivery, and provide different forms of support (e.g., technical and financial support). In contrast, they envisage weakened relationships with government actors such as NAMC, DRDLR and DRDAR, whilst relationships with all other actors remain essentially unchanged.

3.3 Knowledge exchange platform

Given the considerable knowledge gap between technicians and farmers as well as long distances between the feeding centres and the transport limitations, it was agreed that an online forum for knowledge exchange be created to continue sharing best practices. The logic was that technicians and commercial farmers who are more knowledgeable and commercially-focused will feel a desire to share this understanding with farmers from communal areas. In light of this, a Facebook page named ‘Knowledge Exchange Platform for Emergent Livestock Farmers’ was created to facilitate continued discussions beyond the workshop, the URL for which is: <https://www.facebook.com/Knowledge-Exchange-Platform-for-Emergent-Livestock-Farmers-1169312599795740/>.

4. Discussion

The differences in existing understanding of cattle farming knowledge may be because, unlike Gxwalubomvu and Ncorha custom feeding centres, Ikhephu commercial custom feeding centre had the facilities, equipment and college trained personnel with knowledge of animal production, feed production, diet formulation and feed budgeting. As a result of the differences, it was clear that the knowledge shared during the workshop was not among equals as Ikhephu technicians contributed a lot more than participants from the custom feeding centres. Finding ways to share this technical knowledge between the different farmer groups therefore became an important focus of the workshop. Although, an in-depth gender (Kristjanson et al. 2010) or social analysis (Gaviglio et al. 2016) was beyond the scope of this study, it is agreed that such analyses would reveal the context of the communities under study and help to develop appropriate strategies for participation criteria (Mubita et al. 2017).

The lax entry conditions reported at the custom feeding centres, have previously been reported by Marandure et al. (2017), who attributed it to a limited understanding amongst stakeholders

of the rationale for establishing the custom feeding centres. Limited understanding is reflective of lack of consultation of all stakeholders including local cattle producers during the design and implementation stages of the projects. In fact, communal cattle producers are using custom feeding centres as facilities to dispose of vulnerable animals whose value has depreciated due to sickness and/or old age (Myeki et al. 2014). Following the discussion of specifications for cattle entry to the feeding centres, participants from Gxwalubomvu and Ncorha custom feeding centres undertook to set stricter rules that prevent entry of old and sick animals and to limit the time spent by cattle in the custom feeding centre to the recommended maximum of four months. The adoption of more stringent controls over cattle entry requirements to the custom feeding centres, however, might ultimately limit the range of cattle owners who engage with them, thereby, limiting the resultant livelihood benefits. To improve financial sustainability of the custom feeding centres, participants resolved to raise membership fees and cattle entry fees and to re-think their business plans to reduce their dependence on government subsidies. Participants from Ikhephu further suggested the adoption of insurance for animals at custom feeding centres as a potential solution for reimbursing owners for animals lost through death or theft when in the feeding centre. They argued that adding a small amount to membership fees would enable the custom feeding centres to take out insurance policies that compensate owners for losses.

Disposing animals which are no longer productive ties well with the livelihood objectives of most smallholder livestock farmers in communal areas where productive cattle provide offspring, milk, draft power, a form of insurance and a live bank among other benefits (Siegmond-schultze & King 2011). This suggests that either the rationale for these types of feeding centres needs to be rethought or, if the focus on the original objectives is retained, then the user group needs to be more strictly controlled to focus on those who can actually supply

animals that meet the programme's specifications. The latter course would necessarily be much less inclusive and risk benefitting only those who already have larger herds. These issues might have come to the fore had the local cattle producers been given an opportunity to participate during the planning stages of this program. Even then local cattle producers would need to be in a position where they are able to negotiate and engage with power holders so that they can make binding decisions. According to Campbell (2017), participation does not directly translate to empowerment as this differs in context from community to community.

The delays in feed supply as well as in payment of workers at the feeding centres may be due to bureaucratic processes that is consistent with government services and was previously criticised by Siegmund-schultze and King (2011) for stalling designed programs. Failure to change the bureaucratic processes is viewed as one of the leading limitations of participatory methodologies (Mubita et al. 2017). The virtual power presumed to exist in participatory methodologies was also criticised by Datta et al. (2015) who argued that the credibility of the methodologies is only due in instances where evidence of redistribution of power in where previously excluded social groups are given power to control and influence development outcomes.

With regards to feed challenges, all participants from the custom feeding centres suggested exploring ways to produce their own feed locally, thereby reducing dependence on commercial feed supplied by the government. This would involve using land in their respective communities to grow maize and relevant forages such as Lucerne, which would be utilised in the feeding centres. However, this would require support in terms of land, irrigation, fodder production, and feed formulation know-how. Additional equipment would also be required in Gxwalubomvu and Ncorha including a hammer mill and other equipment necessary for feed

processing. This links well with on-going research by Stellenbosch University within these communities aimed at formulating lower-cost diets using locally-based feed resources for the custom feeding programme.

Some of the solutions advanced were closely linked to the alternative actor networks the communities envisaged they would like to develop. For example, to address the serious challenge of operational budget shortages, the participants suggested that alternative funding strategies be sought. Priority was directed towards sourcing funds from other government departments or government funded organisations, such as SEDA and SEFA as well as private companies and non-governmental organisations. Ikhephu participants suggested a particularly novel and interesting approach to improving the commercial viability of their feeding operation based on greater input from existing cooperative members. Their suggestion was that each of the 156 farms serviced by the Ikhephu custom feeding centre could donate a cow to create a communal herd that would be held at the custom feeding centre and collectively owned by the cooperative members. The collective herd could be used in future to assist farmers by leasing or selling animals back to the farmers. Furthermore, the income from the regular sale of animals from the herd could be pooled and put towards the running costs of the custom feeding centre in terms of feed, veterinary expenses and administrative costs, including staff salaries. If well-managed, this approach could potentially make custom feeding centres self-sustainable and provide cattle producers with greater returns.

The sustainability of custom feeding centre cooperatives will also be dependent on an effective management structure. In this regard, participants stated that cooperatives members should genuinely be dedicated and willing to contribute time, effort and appropriate levels of funding. Such dedication on communally owned assets or projects, however, seldom exist in all

406 individuals of a community. In most cases each individual would wish to benefit as much as
407 possible while contributing as little as possible, a phenomenon known as ‘tragedy of the
408 commons’(Dube et al. 2016).This was extended to the authorities in charge of custom feeding
409 centres who were accused of sometimes being too busy to hold meetings and of favouritism.
410 Regular meetings, transparency and accountability will be critical in enabling committees to
411 be more effective in resolving the issues raised. Ultimately, the committee must have the
412 authority to address local mismanagement and corruption and increase awareness amongst both
413 members and non-members of the operational goals and regulations of custom feeding centres.
414

415 Participation, often expressed as the view of the poor or marginalised members of society
416 sometimes conceals existing micro-politics where development is hindered by power relations
417 at a local level (Mubita et al. 2017). The lack of political will reported in Gxwalibombvu and
418 Ncorha could be a result of convergence on power struggles between feeding centres’
419 administration committees and local politicians. Usually local politicians and the traditional
420 leadership possess the power of overseeing all activities in their local communities as they want
421 to be seen as drivers of development at a local level. The politicians and traditional leadership
422 might have felt infuriated and threatened of losing power to administrative committees who
423 are probably driven by a livelihood-based agenda. Consultation of all stakeholders during the
424 design stage of the custom feeding program would have been critical to raise awareness of the
425 intentions of the program and its administrative structures. Otherwise, using existing structures
426 of local power in fostering participation can reinforce existing inequalities instead of
427 stimulating the desired social change (Mubita et al. 2017). Local power relations are often
428 overlooked or treated superficially in development programs resulting in deliberate disregard
429 of program activities through active sabotage (Guijt 2014). Individuals will also align

430 themselves and act in solidarity with respective power groups as reflected by reports of some
431 people discouraging farmers from using the feedlot at Ikhephu feedlot.

432
433 Comparing the outcomes from all three custom feeding centres, it is important to note that in
434 all cases participants envisaged a weakened relationship with NAMC in the alternative actor
435 network. It is not immediately clear why this was so. It could be a pragmatic recognition of the
436 fact that the custom feeding centres are tasked with becoming independent after five years of
437 operation and alternative sources of support need to be found. It may be partly connected to
438 delayed service delivery, particularly of animal feed. There was also a clear split between the
439 custom feeding centres and the Ikhephu commercial custom feeding centre in the additional
440 actors they wished to forge close relationships with. For the communal custom feeding centres,
441 the new actors were all either government funded agencies or departments, whereas for
442 Ikhephu they were either the farmers themselves or private companies. It is clear that in
443 considering their longer-term sustainability, the communal custom feeding centres still see a
444 strong input from government, whereas Ikhephu is keen to diminish reliance on government
445 by drawing more directly on input from their members and supplementing this with input from
446 the private sector.

447
448 It is crucial to facilitate improved linkages between the custom feeding centres and the
449 organisations they envisioned having closer links with. This needs on-going efforts from the
450 managers of the custom feeding centres to identify who will be responsible for creating and
451 maintaining these links. As part of the resolutions, the workshop report was circulated to key
452 organisations and departments mentioned by participants, including: NAMC, DRDAR,
453 DRDLR, NERPO, NDA, CHDA, DTI, SEDA and SEFA. Circulation of the workshop report
454 to the key stakeholders was seen as a good start to initiate these links.

455

456 The approach taken in the workshop enabled the development of trusting relationships between
457 participants and researchers, albeit in a very short space of time. As a result, participants felt
458 able to freely express their views. In fact, participants took a leading role in thoroughly
459 evaluating the constraints to effective functioning of custom feeding centres. In-turn the
460 researchers also gained insight into common challenges associated with the custom feeding
461 centres and the suggestions for rectifying them as well as the visions of participants

462

463 Most importantly, it was enlightening to see some participants empowering each other through
464 knowledge exchange. Knowledge ownership and sharing which was openly demonstrated by
465 participants during their presentations and subsequent discussions is according to Campbell
466 (2017), an important aspect of participatory research that allows participants to engage as
467 collaborators and removes the notion of research being oppressive to them. Positioning the
468 three communities as equal partners in the research was also more likely to encourage them to
469 embrace the findings from the workshop(Masset & Haddad 2015)(Masset & Haddad 2015).
470 However, the risk of more powerful elite local individuals exerting their dominance in the
471 workshop at the expense of the weaker more vulnerable groups of society such as, women and
472 children. Guijt (2014) mentioned domination as a permanent social behaviour that hinder
473 complete participation by the weak and vulnerable individuals in society. Furthermore,
474 Campbell (2017) highlighted the failure of participatory techniques to deal with some local
475 cultural beliefs that oppress and exclude certain people, particularly, women from expressing
476 their views. Such in-depth social analyses was beyond the scope of this study, although, it
477 would be essential to understand local contexts and power relations prior to operationalizing
478 participatory techniques (Smajgl & Ward 2015).

479

480 During their reflections, most participants expressed appreciation of the value of sharing
481 technical knowledge between farmers and technicians from different custom feeding centres.
482 In particular, participants from the communal custom feeding centres highlighted the benefit
483 of interacting with technicians from the Ikhephu commercial custom feeding centre as they
484 perceived them to have better technical knowledge of cattle production and marketing. The
485 observed interactions between technicians, interns and farmers from the custom feeding centres
486 provided a platform for knowledge sharing, which is believed to facilitate rapid and wide
487 adoption of technologies (Ainembabazi & Mugisha 2014). However, it is more questionable if
488 all the Ikhephu attendees felt that these interactions were equally beneficial to them.

489

490 Although, the technical support staff associated with Ikhephu appeared willing to engage with
491 their equivalents at the custom feeding centres, the commercial farmers from Ikhephu seemed
492 more reticent. Despite them being well-aware of the occurrence of the workshop and able to
493 travel independently to attend, their attendance was very low. The few that attended were more
494 focused on receiving practical project support and had limited interest in the idea of problem
495 solving through knowledge exchange with other farmers. During the course of the workshop
496 they mentioned that it was not that the commercial farmers from Ikhephu were opposed in
497 principal to assisting communal farmers through peer-to-peer learning, they were just ‘very
498 busy’ and had more immediate issues to focus on. In retrospect, it would have been interesting
499 to hold two separate workshops with the same objectives, one for Ikhephu farmers and
500 technicians and another for the two custom feeding centres as a way of neutralising domination
501 by Ikhephu technicians that might have been at play during the workshop.

502

503 The online knowledge exchange platform created facilitated sharing of information presented
504 during the workshop. Further engagement with the Facebook page was, however, limited by

the lack of familiarity with or access to ICT by stakeholders, primarily farmers. This ultimately facilitated less discussion and sharing of know-how than was anticipated, perhaps because the approach was primarily driven by the technical interns who were more familiar with information computer technology (ICT) than the farmers. Furthermore, few of these interns remained with the custom feeding programmes for more than a few months after the workshop was held. According to Fatehkia et al. (2018) the current digital revolution enabled by an expansion of ICTs has great potential use in promoting better knowledge exchange, access to information and skills as well as expression of ideas among communities.

5.0 Conclusions and recommendations

The major constraints to the effective delivery of the custom feeding centres highlighted by participants include, inadequate cattle production skills, lack of technical knowledge on feed production and unreliable cattle feed delivery. A package of opportunities including on-site feed production, developing sustainable support networks, establishing a communal herd to cover feeding centre's running expenses and creating an online information sharing platform for cattle producers was suggested by participants. Overall, the participatory approaches adopted were useful in exploring beef cattle custom feeding programme delivery challenges and opportunities, fostering stakeholder engagement, enabling open sharing of knowledge and experiences.

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Table 1: Solutions suggested by participants during the workshop

Category	Solutions
Technical	Develop more stringent rules to limit animals of poor quality from entering into custom feeding centres.
	Explore ways for custom feeding programmes to produce their own feed and thereby reduce dependence on commercial feed supplied by the government.
	Acquire the necessary equipment for on-site feed production and formulation.
Infrastructural	Repair roofs to avoid leaks and spoiling of feed.
	Improve perimeter fencing to prevent access to feedlots by stray livestock.
Institutional	Investigate the possibility of developing closer links with alternative actors including different government departments, NGOs and private companies.
	Explore the use of community land for growing crops and forage.
	Explore alternative health care management systems for cattle in feeding centres.
Economic	Raise membership fees to provide more funds for operation of the custom feeding programmes.
	Ask to members to donate a cow or equivalent to develop a collective, nucleus herd which will be used to provide weaners to the feeding centres and generate income.
	Explore the possibility of introducing insurance for animals at feeding centres and how best to achieve this.
Political	Have a dedicated committee that holds regular meetings.
	Enforce existing regulations so that all members follow formal procedures and desist from asking for special favours.
	Address issues of corruption and nepotism within local political structures involved with feeding centre operation.

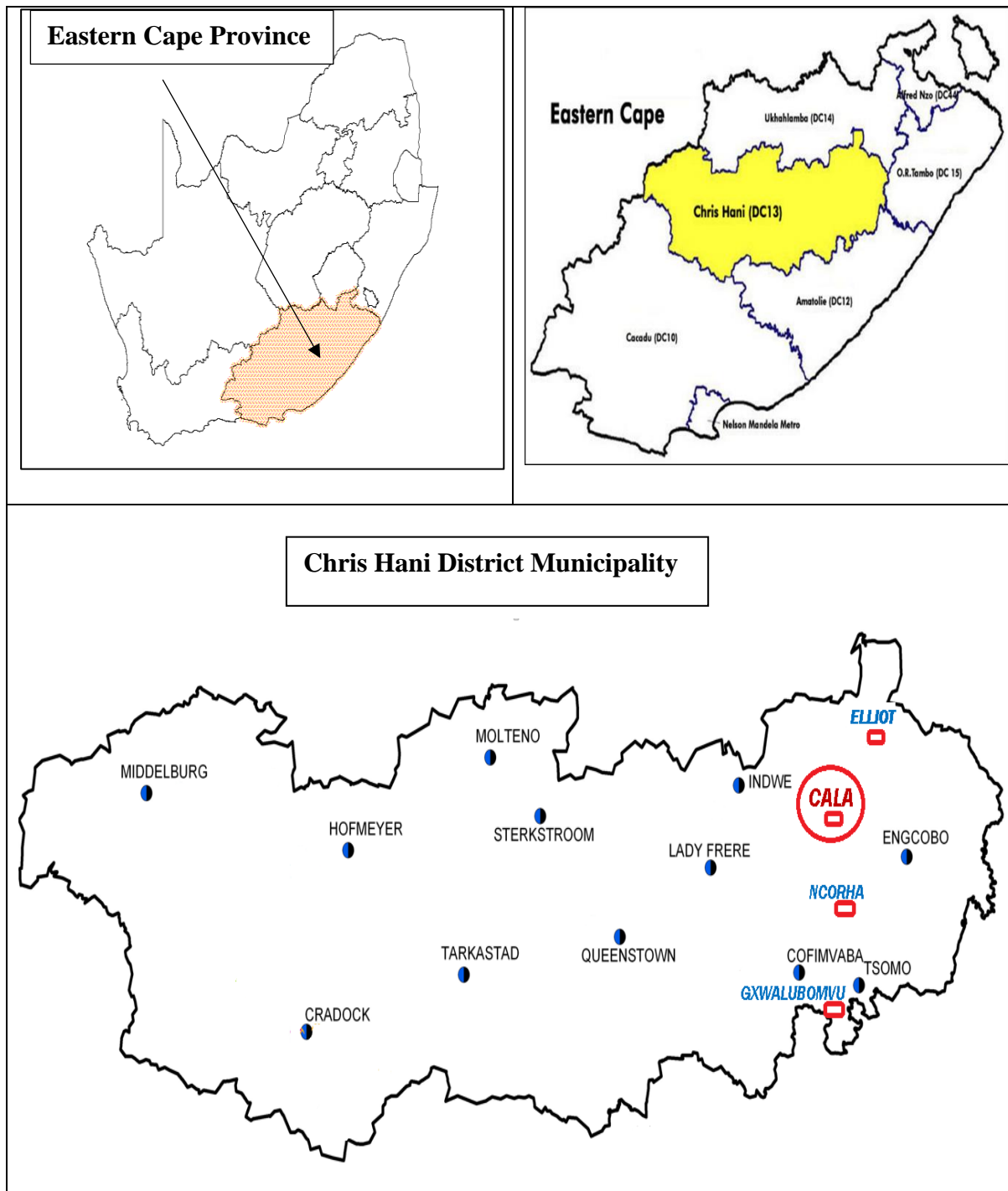


Figure 1: Map showing the locations of the workshop venue and the three communities from where participants were drawn.